

Amendments to the Claims:

Claims 26-47 are pending. Please amend claims 26, 37 and 45. The following listing of claims will replace all prior versions and listings of claims in this application.

Listing of Claims

1 - 25 (canceled)

26 (currently amended): An illumination optical system which illuminates an illumination surface with illumination luminous flux from a light source, comprising:

a first optical system with an optical power in a first plane including a normal to the illumination surface, which guides the illumination luminous flux from the light source to the illumination surface,

wherein the first optical system includes, an optical integrator which has a plurality of lenses with different optical powers different between [[in]] the first plane and ~~different optical powers in~~ a second plane including the normal and being orthogonal to the first plane, and a condenser lens with an optical power in the first plane, which guides the illumination luminous flux emitted from the optical integrator to the illumination surface,

wherein light intensity distribution of the illumination luminous flux on the illumination surface represents a relationship between light intensity and incident angle to the illumination surface, and

wherein, in the light intensity distribution, an incident angle width at which the light intensity reaches half of a peak value in the first plane is twice or more an incident angle width at which the light intensity reaches half of a peak value in the second plane.

27 (previously presented): The illumination optical system according to claim 26, further comprising:

a second optical system with an optical power in the second plane, which guides illumination luminous flux from the light source to the illumination surface,

wherein the second optical system includes an afocal system.

28 (previously presented): The illumination optical system according to claim 27, wherein the afocal system includes a plurality of positive lenses with positive optical powers in the second plane.

29 (previously presented): The illumination optical system according to claim 26, further comprising:

a light intensity conversion element which performs conversion of light intensity distribution of the illumination luminous flux in the second plane.

30 (previously presented): The illumination optical system according to claim 29, wherein the light intensity conversion element is a prism.

31 (previously presented): The illumination optical system according to claim 26, wherein the optical integrator includes two cylindrical lens arrays with refractive powers only in the first plane.

32 (previously presented): The illumination optical system according to claim 26, further comprising:

an optical surface which is inclined with respect to the normal to the illumination surface and reflects at least one of the illumination luminous flux from the light source,

wherein the normal to the optical surface is parallel to the second plane and is not parallel to the first plane.

33 (previously presented): The illumination optical system according to claim 32, wherein the optical surface is a total reflection surface.

34 (previously presented): The illumination optical system according to claim 32, wherein the optical surface has wavelength selectivity.

35 (previously presented): The illumination optical system according to claim 34, wherein the optical surface is a dichroic surface.

36 (previously presented): The illumination optical system according to claim 32, wherein the optical surface reflects the illumination luminous flux with a predetermined linearly polarized component and transmits the illumination luminous flux with a linearly polarized component orthogonal to the predetermined linearly polarized component.

37 (currently amended): An image display apparatus comprising:
at least one image display element;
an illumination optical system which illuminates the image display element with light from a light source; and
a projection optical system which projects an image light from the image display element,

wherein the illumination optical system includes a first optical system with an optical power in a first plane including a normal to the illumination surface of the image display element, which guides light from the light source to the illumination surface,

wherein the first optical system includes an optical integrator having a plurality of lenses with ~~different~~ optical powers different between ~~different optical powers in~~ [[in]] the first plane and ~~different optical powers in~~ a second plane including the normal and being orthogonal to the first plane, and a condenser lens with an optical power in the first plane, which guides the light emitted from the optical integrator to the illumination surface,

wherein light intensity distribution on the illumination surface represents a

relationship between light intensity and incident angle to the illumination surface, and

wherein, in the light intensity distribution, an incident angle width at which the light intensity reaches half of a peak value in the first plane is twice or more an incident angle width at which the light intensity reaches half of a peak value in the second plane.

38 (previously presented): The image display apparatus according to claim 37, wherein the image display apparatus comprises a plurality of image display elements.

39 (previously presented): The image display apparatus according to claim 38, further comprising:

a color separation optical system which separates light from the light source into a plurality of color light components,

wherein the image display elements are illuminated with the color light components through the color separation optical system.

40 (previously presented): The image display apparatus according to claim 37, further comprising:

an optical surface which is inclined with respect to a normal to the illumination surface and reflects at least one of light from the light source,

wherein the normal to the optical surface is parallel to the second plane and is not parallel to the first plane.

41 (previously presented): The image display apparatus according to claim 40, wherein the optical surface is a total reflection surface.

42 (previously presented): The image display apparatus according to claim 40, wherein the optical surface has wavelength selectivity.

43 (previously presented): The image display apparatus according to claim 42,

wherein the optical surface is a dichroic surface.

44 (previously presented): The image display apparatus according to claim 40, wherein the optical surface reflects light with a predetermined polarized component and transmits light with polarized component orthogonal to the predetermined polarized component.

45 (currently amended): An image display apparatus comprising:

at least one display element;

an illumination optical system which illuminates the image display element with light from a light source; and

a projection optical system which projects image light from the image display element;

wherein the illumination optical system includes a first optical system with an optical power in a first plane including a normal to an illumination surface of the image display element, which guides light from the light source to the illumination surface, and an optical surface which is inclined with respect to the normal to the illumination surface and reflects at least one of light from the light source,

wherein the first optical system includes an optical integrator which has a plurality of lenses with ~~different optical power in~~ powers different between the first plane and ~~different optical power in~~ a second plane including the normal and being orthogonal to the first plane, and a condenser lens with an optical power in the first plane, which guides light emitted from the optical integrator to the illumination surface,

wherein light intensity distribution on the illumination surface represents a relationship between light intensity and incident angle to the illumination surface,

wherein the incident angle width at which light intensity reaches half of peak value

in the first plane is larger than the incident angle width at which light intensity reaches half of peak value in the second plane, and

wherein the normal to the optical surface is parallel to the second plane and is not parallel to the first plane.

46 (previously presented): The image display apparatus according to claim 45, wherein the optical surface reflects light with a predetermined polarized component and transmits light with a polarized component orthogonal to the predetermined polarized component.

47 (previously presented): The image display apparatus according to claim 45, wherein the optical surface reflects light with polarized component parallel to the first plane and transmits light with polarized component parallel to the second plane.